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our streets and from its chenopodiaceous character, abundant seeding andthe tenacity with which it holds its own in a fair stand-up fight with the street weeds,bids fair to become thoroughly established. One back street near the gas works, where it grew most abundantly, was regraded last winter, and if the coming summer shows that instead of being destroyed it has only been scattered, I think we may fairly count it in as having come to stay. The plant is as symmetrical in habit, when not crowded, as a young Juniper; the foliage at a distance appears soft and graceful (more so than would be imagined by those who have seen only herbarium specimens), and, above all, presents a light yellowish green color which contrasts prettily with the darker bluish green of its associates.—M. S. Bebb, Rockford, Ill.

Dichogamy of Umbelliferæ.—I am under obligations to Mr. Trelease for his kind correction of my mistake in calling *Umbelliferæ* proterogynous. It was caused by Gray's Manual, page 187 : "the styles are protruded from the bud some time before the anthers develop," also by personal observations of *Erigenia bulbosa*, Nutt., the only plant of this order which had been investigated by myself previously to *Pastinaca*. This I consider an unmistakable case of pro terogyny. The styles protrude from the just unfolding petals for the length of 1 mm. and have an angular divergence of 1-2 mm. At a later stage the stamens expand, the anthers successively dehisce, and during this period the styles approach each other so as to avoid self-fertilization apparently. Frequently this is not effected, and the styles remain expanded. But where they do close during this period they expand again as the stamens grow effete, gradually recurve, become effete themselves, turn reddish-brown and wither away. The stamens and petals drop off at the last expansion of the styles. The different flowers vary greatly, but this is the type development. Not to fall into any error I examined nearly 500 specimens. Therefore I consider our *Erigenia* to be a proterogynous plant, generally fertilized before the development of anthers, but capable of being fertilized by its own pollen, although this is apparently avoided in the first part of the second or polleniferous stage. The coming together of the styles is often indistinct and ineffectual. Plants left unfertilized can then be fertilized in the third stage by their own pollen or even by that of other plants still, since that would be more effective. But I believe that it does not take long for the styles to become effete and the carpels are apparentry fructified before this stage in most cases. Although I have caught during the last 4 days 5 species of Diptera near these plants, I have never seen any at work, although I have looked at hundreds of plants in their native state during the last few days, but the days were stormy and cold. Still, from the presence of nectar in large quantities, I am willing to admit that there may be insects that frequent them. Finally, I am of the opinion (thanks to Mr. Trelease) that this plant (deviating from the family type) originally proterandrous, became, from want of insects caused by its early appearance, autogamous by synanthesis, and is now again, by the adaptation to new insects, becoming dichogamous, but proterogynous, instead of proterandrous.—AUG. F. FOERSTE.

Mr. Foerste was kind enough to send with the above note dried specimens of *Erigenia*, from which it appears that self-fertilization is quite as probable as in *Hydrocotyle*, but although there is no question about the early elongation of the styles I could not be sure that the stigmas were receptive until dehiscence was nearly complete. From theoretical considerations, one might doubt the protogyny. The development of synacmy in a dichogamous species might readily follow a decrease in the number of visiting insects, but if their number afterward increased and dichogamy were again acquired, the hereditary direction of variation should tend to reproduce the same form of dichogamy that had originally been lost, and that still existed in related species and genera, especially in so uniform an order as the *Umbelliferæ*. Mr. Foerste writes that he has noticed a similar development of the stigmas in species of *Thaspium*. It is to be hoped that those who can obtain *Erigenia* will confirm this observation another season, while *Thaspium* can be examined this year. *Scandix Pecten-Veneris* should have been mentioned with *Hydrocotyle* in my note in the GAZETTE for March, as being self-fertile, possibly through incomplete dichogamy, its self-fertility being, as suggested by Mr. Henslow (Trans. Linn. Soc., 2 ser. Bot., I, 365), correlated with the inconspicuousness of its flowers. *Apium* is also stated by Mr. Darwin (Cross and Self-Fert, 172) to be self-fertile.—WM. TRELEASE.

Notes from the Jour. Royal Micr. Soc., February—L. GUIGNARD finds that the embryo-sac of the Mimoseae (*Acacia retinoides* is taken as the type) is formed in the following manner: At the summit of the nucellus, beneath the epidermis, an axial cell, larger than the adjoining one, divides into two superposed cells, the apical and subapical. The subapical cell enlarges rapidly and becomes segmented horizontally into three superposed cells each equal in size to the mother-cell. Of these, the lowest, the true mother-cell of the embryo-sac, enlarges at the expense of the others and the lateral tissue of the nucellus. Resorption soon commences in the two superposed cells; the nuclei lose their sharp outline and soon disappear, together with the cell-walls; finally the whole substance of these cells is absorbed in the development of the lower mother-cell. This process is subject to variations, but it is always the lower cell which becomes the mother-cell and absorbs the others.

The same worker finds polyembryony not an uncommon phenomenon in the Mimoseæ, especially in *Schranckia uncinata*, in which it is allied with other abnormalities of structure.

E. WARTMANN finds that Spanish chestnuts germinate after an exposure of nearly two hours to a cold of – 110°, derived from a mixture of sulphuric ether and solid carbonic acid.

E. Prillieux finds that the effect of warmth in the earth is to cause a hypertrophy of the interior of the stem in a young plant; when closely examined this is found to be accompanied by multiplication of the cell nuclei.

D. H. Scott, investigating the structure and development of laticiferous vessels, finds that they are developed from rows of cells, the transverse walls of which have been gradually absorbed, and, when two vessels lie side by side, the lateral walls also partially. The resorption usually takes place at an early period; in seedlings during the first stages of germination; in the secondary cortex shortly after the cells in question have separated from the cambium. The connection between distant laticiferous vessels is brought about in two ways; either by rows of cells that run transversely coalescing with each other, or by protuberances which unite in their growth, and which finally form canals similar to those of the *Conjugatæ*. Even before the first septa are absorbed, the cells are characterized by special contents, of which latex is probably a constituent.

A Curious Growth of Coreopsis.—Late in the summer of 1873 I observed a remarkable growth of *Coreopsis*, apparently *C. discoidea*, though the plants were so dwarfed and the floral organs so imperfectly developed that I name the species with much hesitancy.

In what is known as the "Big Woods," eight miles southwest of this place (Wheaton College, DuPage County, Illinois), there occur ponds or swamps, with no natural outlet, and bottoms of tenacious brick clay subsoil, several feet in thickness. These mud ponds or swamps are filled up by the winter and spring rains, but dry out in midsummer. The plants of which I am speaking grew *two feet above the ground* on the stems of Cephalanthus bushes, which were standing in one of those dried-out ponds. Long, slender roots (resembling the stems of Dodder), followed closely the fissures of the Cephalanthus bark down to the soil where they develop normally, thus connecting by a slender thread, as it were, the tuft of green herbage above with the moisture supplying earth below. The best developed plants were found highest up, though all were nearly on the same "horizon." Lower down I could see undeveloped seeds sticking to the bark, some of which had sprouted but failed to grow, apparently for want of moisture.

It seems most likely that the seeds floating on the surface of the water during a season of floods collected around the bushes; that the water remained standing until the time of their germination, and then began to slowly subside, and thus the roots following this retreating source of moisture-supply were led down to the ground.

The plants, as before stated, were very much dwarfed, 4 to 6